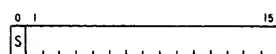
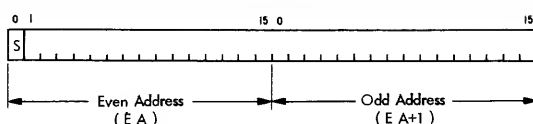


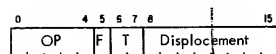
Single Precision Data Word Format



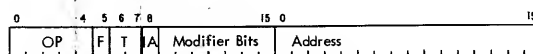
Double Precision Data Word Format



Short Instruction Format



Long Instruction Format



Effective Address Computation

Tag Bits	F = 0 (Direct Addressing)	F = 1, IA = 0 (Direct Addressing)	F = 1, IA = 1 (Indirect Addressing)
T = 00	EA = Disp + IAR	EA = Add	EA = C/Add
T = 01	EA = Disp + XR1	EA = Add + XR1	EA = C/ (Add + XR1)
T = 10	EA = Disp + XR2	EA = Add + XR2	EA = C/ (Add + XR2)
T = 11	EA = Disp + XR3	EA = Add + XR3	EA = C/ (Add + XR3)

Disp = Contents of Displacement field of instruction.
Add = Contents of Address field of instruction.
C = Contents of Location specified by Add or Add + XR.

Instruction Codes and Execution Times

Instruction	Mnemonic	Binary OP Code	Execution Times (in microseconds) for 3.6 μ sec Core Storage								Execution Times (in microseconds) for 2.2 μ sec Core Storage							
			Single Word (F = 0)				Double Word (F = 1)				Single Word (F = 0)				Double Word (F = 1)			
			T = 00		T = 01, 10, or 11		T = 00		T = 01, 10, or 11		T = 00		T = 01, 10, or 11		T = 00		T = 01, 10, or 11	
			Avg.	Max.	Avg.	Max.	Avg. ^①	Max. ^①	Avg. ^①	Max. ^①	Avg.	Max.	Avg.	Max.	Avg. ^①	Max. ^①	Avg. ^①	Max. ^①
Load and Store																		
Load ACC	LD	11000	7.6	-	11.2	-	10.8	-	14.8	-	4.6	-	6.8	-	6.6	-	9.0	-
Load Double	LDD	11001	11.2	-	14.9	-	14.4	-	18.0	-	6.8	-	9.1	-	8.8	-	11.0	-
Store ACC	STO	11010	7.6	-	11.2	-	10.8	-	14.8	-	4.6	-	6.8	-	6.6	-	9.0	-
Store Double	STD	11011	11.2	-	14.9	-	14.4	-	18.0	-	6.8	-	9.1	-	8.8	-	11.0	-
Load Index	LDX	01100	4.5	-	7.2	-	7.2	-	11.8	-	2.7	-	4.4	-	4.4	-	7.2	-
Store Index	STX	01101	7.6	-	11.2	-	11.8	-	15.4	-	4.6	-	6.8	-	7.2	-	9.4	-
Load Status*	LDS ⑦	00100	3.6	-	3.6	-	-	-	-	-	2.2	-	2.2	-	-	-	-	-
Store Status	STS	00101	7.6	-	11.2	-	10.8	-	14.8	-	4.6	-	6.8	-	6.6	-	9.0	-
Arithmetic																		
Add	A	10000	8.0	13.0	11.7	16.6	11.2	16.2	15.3	20.3	4.9	7.9	7.1	10.1	6.8	9.9	9.4	12.4
Add Double	AD	10001	12.2	22.0	15.8	25.6	15.3	25.2	19.3	29.5	7.5	13.4	9.6	15.6	9.4	15.4	11.8	18.0
Subtract	S	10010	8.0	13.0	11.7	16.6	11.2	16.2	15.3	20.3	4.9	7.9	7.1	10.1	6.8	9.9	9.4	12.4
Subtract Double	SD	10011	12.2	22.0	15.8	25.6	15.3	25.2	19.3	29.5	7.5	13.4	9.6	15.6	9.4	15.4	20.1	18.0
Multiply	M	10100	25.7	40.0	29.3	43.6	29.3	43.6	32.9	47.2	15.7	24.4	17.9	26.6	17.9	26.6	11.8	28.8
Divide	D	10101	76.0	150.8	79.6	154.4	79.6	154.4	83.2	150.0	46.4	92.1	48.6	94.4	48.6	94.4	50.8	91.6
And	AND	11100	7.6	-	11.2	-	10.8	-	14.8	-	4.6	-	6.8	-	6.6	-	9.0	-
Or	OR	11101	7.6	-	11.2	-	10.8	-	14.8	-	4.6	-	6.8	-	6.6	-	9.0	-
Exclusive Or	EOR	11110	7.6	-	11.2	-	10.8	-	14.8	-	4.6	-	6.8	-	6.6	-	9.0	-
Shift Left* Modifier Bits 8 & 9:																		
Shift Left ACC	SLA ⑦	00010	③	-	④	-	-	-	-	-	③	-	④	-	-	-	-	-
Shift Left ACC and EXT	SLT ⑦	00010																
Shift Left and Count ACC	③ SLCA ⑦	00010																
Shift Left and Count ACC and EXT	③ SLC ⑦	00010																
Shift Right* Modifier Bits 8 & 9:																		
Shift Right ACC	SRA ⑦	00011	⑤	-	⑥	-	-	-	-	-	⑤	-	⑥	-	-	-	-	
Shift Right ACC and EXT	SRT ⑦	00011																
Rotate Right	RTE ⑦	00011																
Branch																		
Branch and Store IAR	BSI	01000	7.6	-	11.2	-	10.8 ^②	-	14.8	-	4.6	-	6.8	-	6.6 ^②	-	9.0	-
Branch or Skip on Condition	BSC	01001	3.6	-	3.6	-	7.2 ^②	-	11.2	-	2.2	-	2.2	-	4.4 ^②	-	6.8	-
Modify Index and Skip	MDX	01110	4.5	9.9	11.2	16.2	18.5	23.4	18.5	23.4	2.7	6.0	6.8	9.9	11.3	14.3	11.3	14.3
Wait*	WAIT ⑦	00110 ⑤	3.6	-	3.6	-	-	-	-	-	2.2	-	2.2	-	-	-	-	-
Input/Output																		
Execute I/O	XIO ⑩	00001	11.2	-	14.8	-	14.8	-	18.4	-	6.8	-	9.0	-	9.0	-	11.2	-

* Valid in short format only

Notes:

- Indirect addressing, where applicable, adds one storage cycle (2.2 or 3.6 μ sec) to execution time
- If branch is taken
- One storage cycle + .45(N-4)
- Two storage cycles + .45(N-4)
- N > 16: One storage cycle + .45(N-19)
N < 16: One storage cycle + .45(N-4)
- N > 16: Two storage cycles + .45(N-19)
N < 16: Two storage cycles + .45(N-4)
where N = number of positions shifted
- Indirect addressing not allowed
- If T = 00, functions as SLA or SLT
- All unassigned OP codes are defined as Wait operations
- If XIO Read or Write, add one storage cycle

I/O Function Codes and Modifiers

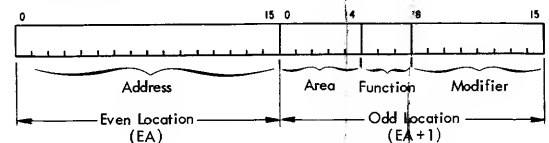
I/O Device (Code) Instructions	Function Code	Bit No.	Bit	Modifier Bits Function
Console Printer (00001) Write Sense Device	001 111	15	1	Reset int. level 4 ind.
Console Keyboard (00001) Read Control (interrupt) Sense Device	010 100 111	15	1	Reset int. level 4 ind.
1442 Card Read Punch (00010) Read Write Control Sense Device	010 001 100 111	8 13 14 15 14 15	1 1 1 1 1 1	Stacker Select Start Read Feed Cycle Start Punch Reset int. level 4 ind. Reset int. level 0 ind.
1134 Paper Tape Reader (00011) 1055 Paper Tape Punch (00011) Read Write Control Sense Device	010 001 100 111	15	1	Reset int. level 4 ind.
Single Disk Storage (00100) 2310 Disk Storage Drive 1 (10001) 2310 Disk Storage Drive 2 (10010) 2310 Disk Storage Drive 3 (10011) 2310 Disk Storage Drive 4 (10100) Initiate Write Initiate Read Control Sense Device	101 110 100 * 111	13-15 13-15 8 8 13 13 2-15 15	0 0 1 1 0 1 1 1	Sector Address Sector Address Read Operation Read-Check Operation Move access forward Move access backward Number of Cylinders Reset int. level 2 ind.
1627 Plotter (00101) Write Sense Device	001 111	15	1	Reset int. level 3 ind.
1132 Printer (00110) Read Emitter Control Sense Device	010 100 111	8 9 13 14 15 15	1 1 1 1 1 1	Start Printer Stop Printer Start Carriage Stop Carriage Space Carriage Reset int. level 1 ind.
Console Entry Switches (00111) Read Sense Device	010 111			
1231 Optical Mark Page Reader (01000) Read Control Sense Device	010 100 111	13 14 8 15	1 1 1 1	Read Operation Start Read I/O Disconnect Select Stacker Reset int. level 4 ind.
2501 Card Reader (01001) Initiate Read Sense Device	110 111	15	1	Reset int. level 4 ind.
Synchronous Communications Adapter (01010) Initiate Write Initiate Read Write Read Control Sense Device	101 110 001 010 100 111	9 9 All 14 15 All 13 14 15 All 14 15 8 9 10 11 12 13 14 15 15	0 0 0 1 1 0 0 1 1 0 1 1 1 1 1 1 1 1 1 1 1	Transmit Condition Adapter Reset Receive Condition Turn Off Send/Receive Turn On Send/Receive Load Buffer From Core Set Sync/Idle Register Turn On Audible Alarm Turn Off Audible Alarm Load Core From Buffer Diagnostic Read 2 Diagnostic Read 1 Enable Disable Start/Stop Timeout Synchronize Diagnostic Mode End Operation Set 6-bit Character Frame Set 7-bit Character Frame Reset int. level 1 ind.
1403 Printer (10101) Initiate Write Control Write Sense Device	101 100 001 * 111	4 5 6 7 8 9 10 11 12 13 14 15 15	1 1 1 1 1 1 1 1 1 1 1 1 1	Single Line Space Skip to Channel 1 Skip to Channel 2 Skip to Channel 3 Skip to Channel 4 Skip to Channel 5 Skip to Channel 6 Skip to Channel 7 Skip to Channel 8 Skip to Channel 9 Skip to Channel 10 Skip to Channel 11 Skip to Channel 12 Reset int. level 4 ind.

* Modifier bits located in address word.

Value Ranges — Single Precision Word

Positive Binary Values	Power of 2	Absolute Values		Negative Binary Values
Bit Positions 0123 4567 8901 2345 11 1111		Decimal Notation Base-10	Hexa- decimal Notation Base-16	Bit Positions 0123 4567 8901 2345 11 1111
0000 0000 0000 0000	-	0	0	No negative zero
0000 0000 0000 0001	0	1	1	1111 1111 1111 1111
0000 0000 0000 0010	1	2	2	1111 1111 1111 1110
0000 0000 0000 0100	2	4	4	1111 1111 1111 1100
0000 0000 0000 1000	3	8	8	1111 1111 1111 1000
0000 0000 0001 0000	4	16	10	1111 1111 1111 0000
0000 0000 0010 0000	5	32	20	1111 1111 1110 0000
0000 0000 0100 0000	6	64	40	1111 1111 1100 0000
0000 0000 1000 0000	7	128	80	1111 1111 1000 0000
0000 0001 0000 0000	8	256	100	1111 1111 0000 0000
0000 0010 0000 0000	9	512	200	1111 1110 0000 0000
0000 0100 0000 0000	10	1,024	400	1111 1100 0000 0000
0000 1000 0000 0000	11	2,048	800	1111 1000 0000 0000
0001 0000 0000 0000	12	4,096	1,000	1111 0000 0000 0000
0010 0000 0000 0000	13	8,192	2,000	1110 0000 0000 0000
0100 0000 0000 0000	14	16,384	4,000	1100 0000 0000 0000
0111 1111 1111 1111	-	32,767	7,FFF	1000 0000 0000 0001
No positive equivalent	15	32,768	8,000	1000 0000 0000 0000

IOCC Format



I/O Device Codes and Interrupt Levels

Device Code	I/O Device	Interrupt		
		Level	Core Storage Address	Bits
00001	Console Keyboard and Printer	4	00012	1
00010	1442 Card Read/Punch	0	00008	0
00011	1134 Paper Tape Reader and 1055 Paper Tape Punch	4	00012	2
00100	Single Disk Storage	2	00010	0
00101	1627 Plotter	3	00011	0
00110	1132 Printer	1	00009	0
00111	Console Entry Switches and Program Stop Switch	4	00012	3
01000	1231 Optical Mark Page Reader	5	00013	0
01001	2501 Card Reader	4	00012	5
01010	Synchronous Communications Adapter	1	00009	1
10001	2310 Disk Storage Drive 1	2	00010	1
10010	2310 Disk Storage Drive 2	2	00010	2
10011	2310 Disk Storage Drive 3	2	00010	3
10100	2310 Disk Storage Drive 4	2	00010	4
10101	1403 Printer	4	00012	4
-----	Storage Access Channel	2	00010	5-15
-----	Storage Access Channel	3	00011	3-8,15
-----	Storage Access Channel	4	00012	6-7
-----	Storage Access Channel	5	00013	1-15
-----	Storage Access Channel II	2	00010	5-15
-----	Storage Access Channel II	3	00011	3-8,15
-----	Storage Access Channel II	4	00012	6-7
-----	Storage Access Channel II	5	00013	1-15

Cycle-Steal Priority

Cycle - Steal Priority		
Priority	Cycle-Steal Level	Device
1	0	Single Disk Storage
2	1	SAC, 2310 Disk Storage
3	2	1132 Printer
4	3	2501 Card Reader
5	-	1403, CPU

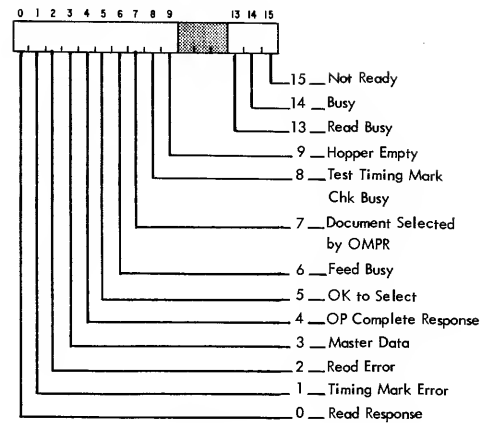
Reserved Core Storage Locations

Tag Bits	Core Storage Address	Description
00	--	Displacement
01	0001	Index Register 1
10	0002	Index Register 2
11	0003	Index Register 3
--	0008 - 0013	Interrupt Addresses
--	0032 - 0039	Printer Scan Field

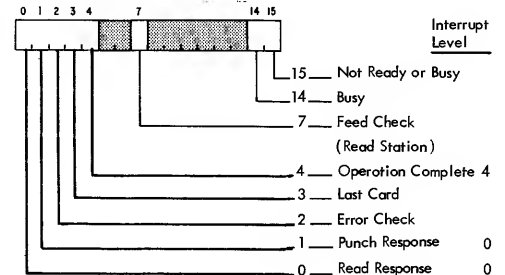
Value Ranges — Double Precision Word

Positive Binary Values		Powers of 2	Absolute Values		Negative Binary Values	
Bit Positions 11 1111 1111 2222 2222 2233 0123 4567 8901 2345 6789 0123 4567 8901			Decimal Notation Base = 10	Hexadecimal Notation Base = 16	Bit Positions 11 1111 1111 2222 2222 2233 0123 4567 8901 2345 6789 0123 4567 8901	
0000 0000 0000 0000 0000 0000 0000 0000		1	0	0	No negative zero	
0000 0000 0000 0000 0000 0000 0000 0001		0	1	1	1111 1111 1111 1111 1111 1111 1111 1111	
0000 0000 0000 0000 0000 0000 0000 0010		1	2	2	1111 1111 1111 1111 1111 1111 1111 1110	
0000 0000 0000 0000 0000 0000 0000 0100		2	4	4	1111 1111 1111 1111 1111 1111 1111 1100	
0000 0000 0000 0000 0000 0000 0000 1000		3	8	8	1111 1111 1111 1111 1111 1111 1111 1000	
0000 0000 0000 0000 0000 0000 0000 1000		4	16	10	1111 1111 1111 1111 1111 1111 1111 1110	
0000 0000 0000 0000 0000 0000 0000 0100		5	32	20	1111 1111 1111 1111 1111 1111 1111 1100	
0000 0000 0000 0000 0000 0000 0000 0100		6	64	40	1111 1111 1111 1111 1111 1111 1111 1100	
0000 0000 0000 0000 0000 0000 0000 1000		7	128	80	1111 1111 1111 1111 1111 1111 1111 1000	
0000 0000 0000 0000 0000 0000 0001 0000		8	256	100	1111 1111 1111 1111 1111 1111 1111 1000	
0000 0000 0000 0000 0000 0000 0010 0000		9	512	200	1111 1111 1111 1111 1111 1111 1111 1000	
0000 0000 0000 0000 0000 0000 0100 0000		10	1,024	400	1111 1111 1111 1111 1111 1111 1111 1000	
0000 0000 0000 0000 0000 0000 1000 0000		11	2,048	800	1111 1111 1111 1111 1111 1111 1000 0000	
0000 0000 0000 0000 0000 0001 0000 0000		12	4,096	1,000	1111 1111 1111 1111 1111 1111 0000 0000	
0000 0000 0000 0000 0000 0010 0000 0000		13	8,192	2,000	1111 1111 1111 1111 1111 1110 0000 0000	
0000 0000 0000 0000 0000 0100 0000 0000		14	16,384	4,000	1111 1111 1111 1111 1111 1100 0000 0000	
0000 0000 0000 0000 0000 1000 0000 0000		15	32,768	8,000	1111 1111 1111 1111 1110 0000 0000 0000	
0000 0000 0000 0000 0001 0000 0000 0000		16	65,536	10,000	1111 1111 1111 1111 1110 0000 0000 0000	
0000 0000 0000 0000 0010 0000 0000 0000		17	131,072	20,000	1111 1111 1111 1110 0000 0000 0000 0000	
0000 0000 0000 0100 0000 0000 0000 0000		18	262,144	40,000	1111 1111 1111 1100 0000 0000 0000 0000	
0000 0000 0000 1000 0000 0000 0000 0000		19	524,288	80,000	1111 1111 1111 1000 0000 0000 0000 0000	
0000 0000 0001 0000 0000 0000 0000 0000		20	1,048,576	100,000	1111 1111 1111 0000 0000 0000 0000 0000	
0000 0000 0010 0000 0000 0000 0000 0000		21	2,097,152	200,000	1111 1111 1110 0000 0000 0000 0000 0000	
0000 0000 0100 0000 0000 0000 0000 0000		22	4,194,304	400,000	1111 1111 1100 0000 0000 0000 0000 0000	
0000 0000 1000 0000 0000 0000 0000 0000		23	8,388,608	800,000	1111 1111 1000 0000 0000 0000 0000 0000	
0000 0001 0000 0000 0000 0000 0000 0000		24	16,777,216	1,000,000	1111 1111 0000 0000 0000 0000 0000 0000	
0000 0010 0000 0000 0000 0000 0000 0000		25	33,554,432	2,000,000	1111 1110 0000 0000 0000 0000 0000 0000	
0000 0100 0000 0000 0000 0000 0000 0000		26	67,108,864	4,000,000	1111 1100 0000 0000 0000 0000 0000 0000	
0000 0000 0000 0000 0000 0000 0000 0000		27	134,217,728	8,000,000	1111 1000 0000 0000 0000 0000 0000 0000	
0001 0000 0000 0000 0000 0000 0000 0000		28	268,435,456	10,000,000	1111 0000 0000 0000 0000 0000 0000 0000	
0010 0000 0000 0000 0000 0000 0000 0000		29	536,870,912	20,000,000	1110 0000 0000 0000 0000 0000 0000 0000	
0100 0000 0000 0000 0000 0000 0000 0000		30	1,073,741,824	40,000,000	1100 0000 0000 0000 0000 0000 0000 0000	
0111 1111 1111 1111 1111 1111 1111 1111		-	2,147,483,647	7F,FFF,FFF	1000 0000 0000 0000 0000 0000 0000 0001	
No positive equivalent		31	2,147,483,648	80,000,000	1000 0000 0000 0000 0000 0000 0000 0000	

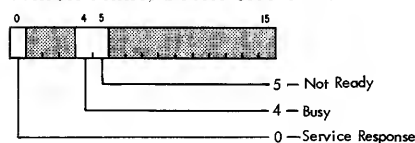
1231 Device Status Word



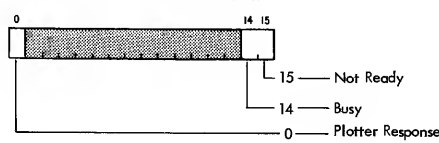
1442 Device Status Word



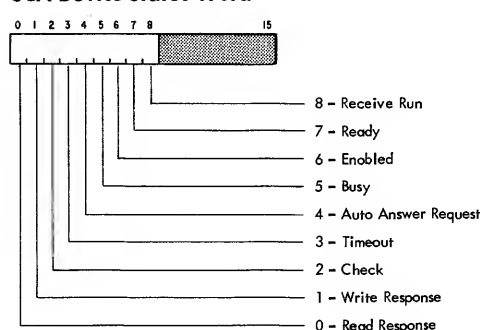
Console Printer Device Status Word



1627 Device Status Word

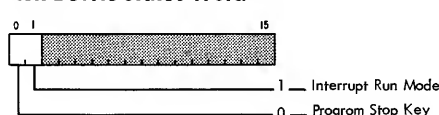


SCA Device Status Word

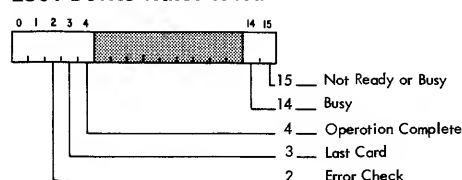


Program Stop Key and Interrupt

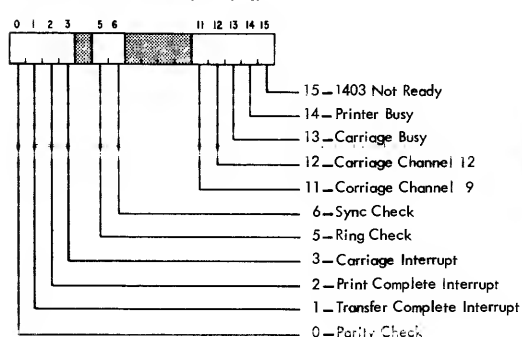
Run Device Status Word



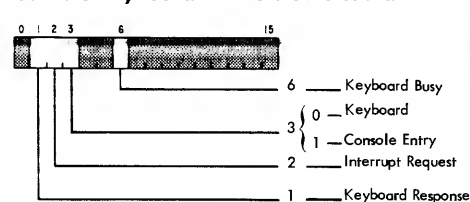
2501 Device Status Word



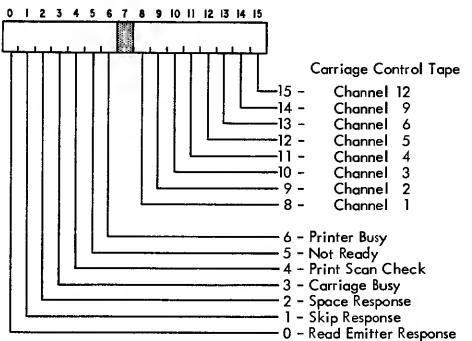
1403 Device Status Word



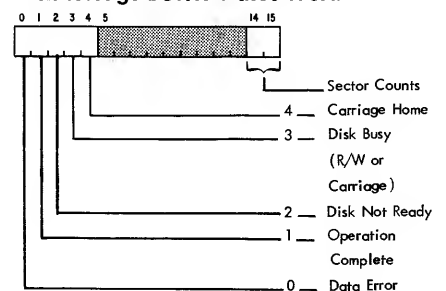
Console Keyboard Device Status Word



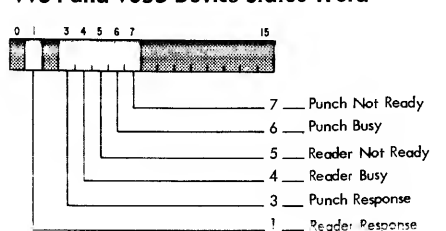
1132 Device Status Word



Disk Storage Device Status Word



1134 and 1055 Device Status Word



1132 Printer Code

Character	Hex	I/O Bus Bits							
		0	1	2	3	4	5	6	7
A	C1	1	1	0	0	0	0	0	1
B	C2	1	1	0	0	0	0	0	1
C	C3	1	1	0	0	0	0	1	1
D	C4	1	1	0	0	0	1	0	0
E	C5	1	1	0	0	0	0	1	0
F	C6	1	1	0	0	0	1	1	0
G	C7	1	1	0	0	0	1	1	
H	C8	1	1	0	0	1	0	0	0
I	C9	1	1	0	0	1	0	0	1
J	D1	1	1	0	1	0	0	0	1
K	D2	1	1	0	1	0	0	1	0
L	D3	1	1	0	1	0	0	1	1
M	D4	1	1	0	1	0	1	0	0
N	D5	1	1	0	1	0	1	0	1
O	D6	1	1	0	1	0	1	1	0
P	D7	1	1	0	1	0	1	1	1
Q	D8	1	1	0	1	1	0	0	0
R	D9	1	1	0	1	1	0	0	1
S	E2	1	1	1	0	0	0	1	0
T	E3	1	1	1	0	0	0	0	1
U	E4	1	1	1	0	0	1	0	0
V	E5	1	1	1	0	0	1	0	1
W	E6	1	1	1	0	0	1	1	0
X	E7	1	1	1	0	0	1	1	1
Y	E8	1	1	1	0	1	0	0	0
Z	E9	1	1	1	0	1	0	0	1
0	F0	1	1	1	1	0	0	0	0
1	F1	1	1	1	1	0	0	0	1
2	F2	1	1	1	1	0	0	1	0
3	F3	1	1	1	1	0	0	1	1
4	F4	1	1	1	1	0	1	0	0
5	F5	1	1	1	1	0	1	0	1
6	F6	1	1	1	1	0	1	1	0
7	F7	1	1	1	1	0	1	1	1
8	F8	1	1	1	1	1	0	0	0
9	F9	1	1	1	1	1	0	0	1
=	7E	0	1	1	1	1	1	1	0
\$	5B	0	1	0	1	1	0	1	1
.	4B	0	1	0	0	1	0	1	1
'	7D	0	1	1	1	1	1	0	1
,	6B	0	1	1	0	1	0	1	1
(	4D	0	1	0	0	1	1	0	1
-	6D	0	1	1	0	1	1	0	1
)	5D	0	1	0	1	1	1	0	1
+	4E	0	1	0	0	1	1	1	0
/	61	0	1	1	0	0	0	0	1
*	5C	0	1	0	1	1	1	0	0
&	50	0	1	0	1	0	0	0	0

AND, OR, EOR Operations

Memory → ACC →	Results		
	AND	OR	EOR
0 → 0 →	0	0	0
0 → 1 →	0	1	1
1 → 0 →	0	1	1
1 → 1 →	1	1	0

BSC Condition Code

Bit Position	Condition
10	ACC zero
11	ACC negative
12	ACC positive, not zero
13	ACC even
14	Carry Indicator OFF
15	Overflow Indicator OFF

Short Instruction
Skip if any one condition is true
No-Op if all bits are zero

Long Instruction
Branch if none of the conditions is true
Unconditional branch if all bits are zero

1403 Printer Code

Character	Hex	Bits							
		0	1	2	3	4	5	6	7
A	64	0	1	1	0	0	1	0	0
B	25	0	0	1	0	0	1	0	1
C	26	0	0	1	0	0	1	1	0
D	67	0	1	1	0	0	1	1	1
E	68	0	1	1	0	0	1	0	0
F	29	0	0	1	0	1	0	0	1
G	2A	0	0	1	0	1	0	1	0
H	6B	0	1	1	0	1	0	1	1
I	2C	0	0	1	0	1	1	0	0
J	58	0	1	0	1	1	0	0	0
K	19	0	0	0	1	1	0	0	1
L	1A	0	0	0	1	1	0	1	0
M	5B	0	1	0	1	1	0	1	1
N	1C	0	0	0	1	1	1	0	0
O	5D	0	1	0	1	1	1	0	1
P	5E	0	1	0	1	1	1	1	0
Q	1F	0	0	0	1	1	1	1	1
R	20	0	0	0	1	0	0	0	0
S	0D	0	0	0	0	1	1	0	1
T	0E	0	0	0	0	1	1	1	0
U	4F	0	1	0	0	1	1	1	1
V	10	0	0	0	1	0	0	0	0
W	51	0	1	0	1	0	0	0	1
X	52	0	1	0	1	0	0	1	0
Y	13	0	0	0	1	0	0	1	1
Z	54	0	1	0	1	0	1	0	0
0	49	0	1	0	0	1	0	0	1
1	40	0	1	0	0	0	0	0	0
2	01	0	0	0	0	0	0	0	1
3	02	0	0	0	0	0	0	1	0
4	43	0	1	0	0	0	0	1	1
5	04	0	0	0	0	0	1	0	0
6	45	0	1	0	0	0	1	0	1
7	46	0	1	0	0	0	1	1	0
8	07	0	0	0	0	0	1	1	1
9	08	0	0	0	0	1	0	0	0
=	4A	0	1	0	0	1	0	1	0
\$	62	0	1	1	0	0	0	1	0
.	6E	0	1	1	0	1	1	1	0
'	0B	0	0	0	0	1	0	1	1
,	16	0	0	0	1	0	1	1	0
(	57	0	1	0	1	0	1	1	1
-	61	0	1	1	0	0	0	0	1
)	2F	0	0	1	0	1	1	1	1
+	6D	0	1	1	0	1	1	0	1
/	4C	0	1	0	0	1	1	0	0
*	23	0	0	1	0	0	0	1	1
&	15	0	0	0	1	0	1	0	1

Tag Bit Code

Instruction	Tag Bits	Register/Operation
Load Index	00	IAR
Store Index	01	XR1
	10	XR2
	11	XR3
Shift Left	00	Disp.
Shift Right	01	XR1
	10	XR2
	11	XR3
Modify Index and Skip		
F = 0	00	Disp. added to IAR
	01	Disp. added to XR1
	10	Disp. added to XR2
	11	Disp. added to XR3
F = 1; IA = 0	00	Disp. added to C
	01	Add. added to XR1
	10	Add. added to XR2
	11	Add. added to XR3
F = 1; IA = 1	00	Disp. added to C
	01	C added to XR1
	10	C added to XR2
	11	C added to XR3

Disp. = Contents of Displacement field of instruction
Add. = Contents of Address field of instruction
C = Contents of location specified by Add.

Console Printer Code

Character Code Bits						U/L Case		Ctrl
B0	B1	B2	B3	B4	B5	B6=0 LC	B6=1 UC	B7
0	0	1	1	1	1	A	A	0
0	0	0	1	1	0	B	B	0
0	0	0	1	1	1	C	C	0
0	0	1	1	0	0	D	D	0
0	0	1	1	0	1	E	E	0
0	0	0	1	0	0	F	F	0
0	0	0	1	0	1	G	G	0
0	0	1	0	0	0	H	H	0
0	0	1	0	0	1	I	I	0
0	1	1	1	1	1	J	J	0
0	1	0	1	1	0	K	K	0
0	1	0	1	1	1	L	L	0
0	1	1	1	0	0	M	M	0
0	1	1	1	0	1	N	N	0
0	1	0	1	0	0	O	O	0
0	1	0	1	0	1	P	P	0
0	1	1	0	0	0	Q	Q	0
0	1	1	0	0	1	R	R	0
1	0	0	1	1	0	S	S	0
1	0	0	1	1	1	T	T	0
1	0	1	1	0	0	U	U	0
1	0	1	1	0	1	V	V	0
1	0	0	1	0	0	W	W	0
1	0	0	1	0	1	X	X	0
1	0	1	0	0	0	Y	Y	0
1	0	1	0	0	1	Z	Z	0
1	1	1	1	1	1	(	(	0
1	1	1	0	1	0	2	2	0
1	1	1	0	1	1	3	3	0
1	1	1	1	0	0	4	4	0
1	1	1	1	0	1	5	5	0
1	1	1	0	1	0	6	6	0
1	1	1	0	1	1	7	7	0
1	1	1	1	0	0	8	8	0
1	1	1	1	0	1	9	9	0
1	1	0	0	0	0	0	0	0
1	1	0	0	1	1	#	#	0
1	0	0	0	0	0	/	/	0
1	0	0	0	0	1	-	-	0
0	1	0	0	0	0	,	,	0
0	1	0	0	0	1	&	&	0
0	0	0	0	0	0	\$	\$	0
0	0	0	0	0	1	@	@	0
0	0	0	0	0	0	.	.	0

Console Printer Control Code

Function	0 1 2 3 4 5 6 7 8 15
Carrier Return	1 0 0 0 0 0 0 1
Tabulate	0 1 0 0 0 0 0 1
Space	0 0 1 0 0 0 0 1
Backspace	0 0 0 1 0 0 0 1
Shift to Red*	0 0 0 0 1 0 0 1
Shift to Black*	0 0 0 0 0 1 0 1
Line Feed	0 0 0 0 0 0 1 1

* May be done concurrently with any other function.



International Business Machines Corporation
Data Processing Division
112 East Post Road, White Plains, N.Y. 10601
[USA Only]

IBM World Trade Corporation
821 United Nations Plaza, New York, New York 10017
[International]